Northeast Pellets
Aroostook County
Ashland, Maine
A-929-71-A-N

Departmental
Findings of Fact and Order
Air Emission License

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Northeast Pellets of Ashland, Maine has applied for a new license to permit the construction and operation of a wood-fired rotary sawdust dryer for their wood pelletizing operation.

B. Emission Equipment

The following equipment is addressed in this air emission license:

Fuel Burning Equipment

Equipment	Max. Capacity (MMBtu/hr)	Max. Firing Rate	Fuel Type, % sulfur	Post Comb. Controls	Stack #
Rotary Dryer	25	1.57 tons/hr[1]	sawdust	cyclone	1

Process Sources

Equipment	Stack #
Screen	Fugitive
Fuel conveying system	Fugitive

C. Application Classification

A new source is considered a major source based on whether or not expected emissions exceed the "Significant Emission Levels" as defined in the Department's regulations. The emissions for the new source are determined by the maximum future license allowed emissions, as follows:

[1] Based on wood at 12% moisture (0.008 MMBtu/hr higher heating value.)

Pollutant	**Max. Future License (TPY)**	**Sig. Level**
PM	32.85	100
PM_{10}	32.85	100
SO_2	2.74	100
NO_x	24.09	100
CO	65.70	100
VOC	1.42	50

The Department has determined the facility is a minor source and the application has been processed through Chapter 115 of the Department's regulations.

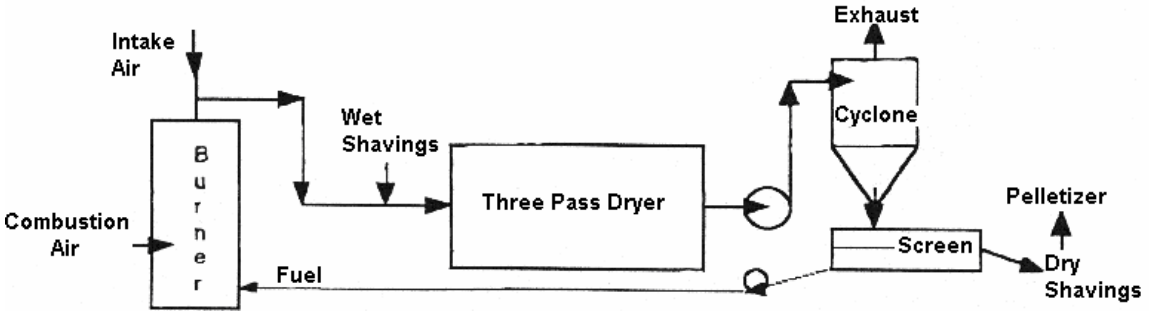
II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in Chapter 100 of the Department regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas. BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Chapter 100 of the Department's regulations. BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Process Description

Northeast Pellets plans to produce fuel for pellet-fired wood stoves. The facility will operate a biomass (sawdust) fired rotary dryer with a maximum heat input of 25 MMBtu/hr.



Wet shavings will be received at the facility and introduced into a three pass dryer with the hot combustion air. The dryer reduces the moisture content of the wood

to 12% or lower. The exhaust from the dryer enters a cyclone, which separates the dried shavings from the undersized particles. The shavings are pelletized and sold as wood fuel. The dried sawdust-like wood particles are conveyed back to the burner as fuel, where they are fired in semi-suspension to enhance complete combustion.

C. Rotary Dryer

Northeast Pellets proposes to operate a direct-contact, triple-pass rotary wood-fired dryer with a burner rated at a maximum of 25 MMBtu/hr. Once the equipment has been purchased by Northeast Pellets, the facility will amend the Air License to reflect the actual size of the burner selected. The dryer will be used to dry wood shavings for pelletized stove fuel.

The burner operates with automatic combustion controls and maintains a combustion temperature of 1400ºF. Due to the combination of high combustion temperature and the use of dry wood residue as fuel, the burner will produce very low amounts of sulfur dioxide (SO_2), carbon monoxide (CO) and volatile organic compounds (VOC). Combustion temperatures are not so high as to cause the creation of thermal NOx (generally requiring temperatures of 2000ºF or higher.) Ash that is generated from combustion is carried along with the hot flue gases into the dryer where the gases and ash come into direct contact with the wet shavings being dried. This removes much of the ash from the exhaust stream. The burner gases exhaust to the atmosphere through a cyclone which removes more of the fine particles from the exhaust stream. MEDEP Chapter 101 limits opacity from the cyclone to 20% on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period.

The dryer is designed to operate with an inlet air temperature from the burner of between 750ºF and 850ºF. The manufacturer indicates that at higher temperatures the hot gases may cause the resin in the wood shavings to “cook out” creating blue, hazy visible emissions. To prelude the emission of this blue haze, the dryer shall be operated with a maximum inlet air temperature of 800ºF.

A summary of the BACT analysis for the Rotary Dryer is the following:

1. SO_2, NOx, CO and VOC lb/MMBtu emission limits based on AP-42 data dated 7/01 for wood fired units.
2. PM lb/MMBtu emission limit based on Chapter 103 and PM_{10} lb/hr emission limit based on the PM limit.
3. Visible emissions from the Rotary Dryer cyclone (Stack #1) shall not exceed 20% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period.

D. Fugitive Emissions

Visible emissions from a fugitive emission source (including the screening operation, the fuel conveying system, fuel stockpiles and roadways) shall not exceed 20 percent opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour. There are no emissions associated with the pelletizing operation.

E. Annual Emissions

Northeast Pellets shall be restricted to the following annual emissions, based on the following, on a 12 month rolling total. Emissions are based on continuous operation of the dryer:

Total Licensed Annual Emission for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	**PM_{10}**	**SO_2**	**NOx**	**CO**	**VOC**
Total TPY	32.85	32.85	2.74	24.09	65.70	1.42

III. AMBIENT AIR QUALITY ANALYSIS

According to the Maine Regulations Chapter 115, the level of air quality analyses required for a minor new source shall be determined on a case-by case basis. Based on the information available in the file, and the similarity to existing sources, Maine Ambient Air Quality Standards (MAAQS) will not be violated by this source.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-929-71-A-N subject to the following conditions:

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples,

conducting inspections, or examining and copying records relating to emissions (38 MRSA §347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [MEDEP Chapter 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [MEDEP Chapter 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [MEDEP Chapter 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [MEDEP Chapter 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [MEDEP Chapter 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [MEDEP Chapter 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [MEDEP Chapter 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [MEDEP Chapter 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been

necessary in order to maintain compliance with the conditions of the air emission license. [MEDEP Chapter 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

A. perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

1. within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or
2. pursuant to any other requirement of this license to perform stack testing.

B. install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

C. submit a written report to the Department within thirty (30) days from date of test completion.

[MEDEP Chapter 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

A. within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

B. the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

C. the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[MEDEP Chapter 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for

the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [MEDEP Chapter 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [MEDEP Chapter 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [MEDEP Chapter 115]

SPECIFIC CONDITIONS

(16) **Rotary Dryer**

A. The Rotary Dryer shall not exceed a maximum heat input of 25 MMBtu/hr. Northeast Pellets shall amend this Air Emission License to reflect the actual size of the dryer once the equipment has been purchased. [MEDEP Chapter 115, BACT]

B. The Rotary Dryer shall fire wood waste (sawdust). [MEDEP Chapter 115, BACT]

C. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Rotary Dryer	PM	0.3	MEDEP, Chapter 103, Section 2(B)(4)(a)

D. Emissions from the Rotary Dryer shall not exceed the following [MEDEP Chapter 115, BACT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NOx (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Rotary Dryer	7.50	7.50	0.63	5.50	15.0	0.33

E. The temperature of exhaust gases entering the dryer shall not exceed 800ºF. [MEDEP Chapter 115, BACT]

F. Visible emissions from the Rotary Dryer cyclone (Stack #1) shall not exceed 20% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period. [MEDEP Chapter 101]

(17) **Fugitive Emissions**

Visible emissions from a fugitive emission source (including the screening operation, the fuel conveying system, fuel stockpiles and roadways) shall not exceed 20 percent opacity, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20 percent in any one (1) hour. [MEDEP Chapter 101]

(18) **Malfunction and Breakdown**

Northeast Pellets shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 MRSA §605).

(19) **Annual Emission Statement**

In accordance with MEDEP Chapter 137, the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

1) A computer program and accompanying instructions supplied by the Department;

   or

2) A written emission statement containing the information required in MEDEP Chapter 137.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437

The emission statement must be submitted by July 1 or as otherwise specified in Chapter 137.

(20) **Air Toxics Emission Statement**

If Northeast Pellets exceeds the thresholds for HAPs listed in Appendix A of MEDEP Chapter 137 in an inventory year, in accordance with MEDEP Chapter 137 the licensee shall report, no later than July 1 every three years (2005, 2008, 2011, etc.) or as otherwise stated in Chapter 137, the information necessary to accurately update the State's toxic air pollutants emission inventory by means of a

computer program supplied by the Department or a written emission statement containing the information required in MEDEP Chapter 137.

NOTE: Based on AP-42 emission factors for fuel burning equipment, Northeast Pellets will most likely exceed the Chapter 137 thresholds of HAPs based on fuel burning alone should the facility exceed the firing of 142 tons of wood waste (12% moisture) in a calendar year.

Reports and questions should be directed to:

Attn: Criteria Emission Inventory Coordinator
Maine DEP
Bureau of Air Quality
17 State House Station
Augusta, ME 04333-0017

Phone: (207) 287-2437 [MEDEP Chapter 137]

(21) **Payment of Annual License Fee**

Northeast Pellets shall pay the annual air emission license fee within 30 days of April 30 of each year. Pursuant to 38 MRSA §353-A, failure to pay this annual fee in the stated timeframe is sufficient grounds for revocation of the license under 38 MRSA §341-D, subsection 3.

DONE AND DATED IN AUGUSTA, MAINE THIS DAY OF 2006.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: October 5, 2005
Date of application acceptance: October 11, 2005

Date filed with the Board of Environmental Protection: _____

This Order prepared by Rachel E. Pilling, Bureau of Air Quality.